

IN THE CIRCUIT COURT OF THE SIXTH JUDICIAL CIRCUIT  
OF THE STATE OF FLORIDA IN AND FOR PINELLAS COUNTY  
CRIMINAL DIVISION

STATE OF FLORIDA,

v.

JAMES S. DUNCAN,

Person ID: 481823, Defendant. /

CASE NO.: CRC94-04801CFANO

UCN: 521994CF004801XXXXNO

DIVISION: B

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CRIMINAL COURT RECORDS  
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KEN BURKE  
CLERK OF CIRCUIT COURT  
AND COMPTROLLER

FINAL ORDER DENYING

DEFENDANT'S MOTION FOR POSTCONVICTION RELIEF

THIS CAUSE came before the Court upon remand from the Second District Court of Appeal, reversing this Court's April 29, 2016 Order Dismissing Defendant's Motion for Postconviction Relief, filed on December 22, 2015, pursuant to Florida Rule of Criminal Procedure 3.850. On October 18, 2018, the Court held an evidentiary hearing pursuant to the Second DCA's mandate. Having reviewed the appellate court's opinion, the motion, the record, applicable law, and having conducted an evidentiary hearing, the Court finds as follows:

PROCEDURAL HISTORY

On March 27, 1996, a jury found Defendant guilty of thirteen counts of aggravated child abuse. On May 3 of that year, the Court sentenced him to fifteen years in prison on counts one through four and ten years in prison on counts five through thirteen, with counts one through five to run consecutively and the remaining counts to run concurrent with count five. Defendant appealed, and the Second District Court of Appeal affirmed. See *Duncan v. State*, 696 So. 2d 359 (Fla. 2d DCA 1997). The mandate issued on or about July 8, 1997.

Defendant filed a motion for postconviction relief on December 22, 2015, in which he raised a single claim of newly discovered evidence based on a scientific article published in a medical journal in January 2014 by Doctors David Ayoub, Charles Hymn, Marta Cohen, and Marvin Miller, and an opinion rendered by Dr. Miller on February 10, 2015, based on the 2014 article and a review of K.D.'s medical history. Defendant alleged that he is entitled to a new trial because the 2014 article and Dr. Miller's report establish that the victim's injuries in this case were the result of an undiagnosed medical condition, such as a metabolic bone disease, scurvy, rickets, copper deficiency, or maternal use of drugs, rather than child abuse.

After receiving a response from the State, this Court dismissed Defendant's motion in an order dated April 26, 2016. In this Court's order dismissing Defendant's motion, the Court found that Defendant's claim was untimely because he had not shown that he could not have obtained an expert to diagnose the possibility of metabolic bone disease before the 2014 article. The Court further found that Defendant's lack of access to medical journals in prison did not toll his time to file a Rule 3.850 motion.

Defendant timely appealed this Court's order and the Second District Court of Appeal reversed and remanded this Court's order. *See Duncan v. State*, 232 So. 3d 450 (Fla. 2d DCA 2017). The Second District found that Defendant's newly discovered evidence claim was not conclusively refuted by the record and that this Court relied upon evidence outside the record to deny the claim. *Id.* The Second District remanded the case for this Court to conduct an evidentiary hearing on Defendant's claim. *Id.* The mandate issued on February 7, 2018. Upon remand, on October 18, 2018, an evidentiary hearing was conducted on Defendant's single claim of newly discovered evidence.

#### **I. The Motion:**

As indicated above, Defendant's sole claim of newly discovered evidence is based on an article he refers to as "a groundbreaking scientific discovery," which was published in a January 2014 peer-reviewed medical journal (the American Journal of Roentgenology), along with a February 2015 opinion rendered by an author (Dr. Marvin Miller) of that article based on a review of the evidence in this case entitles Defendant to vacate his conviction and sentence of child abuse. More specifically, Defendant alleges that the article was the product of newly developed science, not known or possible to discover with the efforts of due diligence at the time of Defendant's trial. Defendant alleges that "gaps in our collective knowledge at the time of his trial have recently been filled," thereby indicating that the victim was not the victim of child abuse; but rather, the child had a metabolic bone disorder that caused fractures. Defendant maintains that all parties were ignorant of the child's condition at the time of trial and that "we" can now say with certainty that the child suffered a previously undiagnosed medical condition. Defendant alleges that if the jury had the benefit of this "unequivocal diagnosis," the trial would have resulted in an acquittal.

Newly discovered evidence claims are appropriately brought in a motion pursuant to Rule 3.850, as Defendant has done here. *See Jones v. State*, 591 So. 2d 911, 915 (Fla. 1991). To be successful on a claim of newly discovered evidence, two requirements must be met. The court

must first determine whether the evidence qualifies as newly discovered evidence. *Id.* at 916. That is, the evidence must have been unknown by the trial court, by the party, or by counsel at the time of trial, and it must appear that defendant or his counsel could not have known of it by the use of diligence. *Jones v. State*, 709 So. 2d 512, 521 (Fla. 1998) (internal quotation omitted). Where the record does not conclusively refute that the claim meets the definition of newly discovered evidence, an evidentiary hearing is necessary. *See Jones*, 591 So. 2d at 916.

"Second, the newly discovered evidence must be of such nature that it would probably produce an acquittal on retrial." *Jones*, 709 So. 2d at 521. In making this determination, "the trial court is required to consider all newly discovered evidence which would be admissible at trial and then evaluate the weight of both the newly discovered evidence and the evidence which was introduced at the trial." *Id.* (internal quotations omitted). More specifically, the trial court should initially consider whether or not the evidence would have been admissible at trial; then, the court should evaluate the weight including whether the evidence goes to the merits of the case or whether it constitutes impeachment evidence. *Id.* The court should also consider whether the evidence is cumulative to other evidence in the case. *Id.* In addition, the court should consider "the materiality and relevance of the evidence and any inconsistencies in the newly discovered evidence." *Id.* Newly discovered evidence satisfies the second prong of the *Jones* test if it weakens the case against the defendant so as to give rise to a reasonable doubt as to his culpability. *Id.* at 526 (internal quotation omitted).

The article at issue, "A Critical Review of the Classic Metaphyseal Lesion: Traumatic or Metabolic?" was authored by Doctors David M. Ayoub, Charles Hymn, Marta Cohen, and Marvin Miller, and was published in the American Journal of Roentgenology in January 2014. The article indicates that the authors evaluated 63 infants with unexplained fractures in which child abuse was alleged and 67% exhibited classic metaphyseal lesion-like lesions. The article further indicated that from clinical and radiographic findings, the authors concluded that most of the lesions were not traumatic in origin but likely related to underlying metabolic bone disease. The article is largely a critical review of the original classic metaphyseal lesions ("CML") literature. The article concluded that the hypothesis that CMLs are secondary to child abuse is poorly supported. The article further concluded that the histological and radiographic features of CMLs

are similar to healing infantile rickets.<sup>1</sup> Lastly, the article concludes that until CMLs “are experimentally replicated and independently validated, their traumatic origin remains unsubstantiated.” Essentially, this article criticizes the long-standing assertion that CMLs are highly specific for child abuse and asserts that CMLs may not be traumatic in origin but could be related to underlying metabolic bone disease.

In February 2015, Dr. Miller, one of the 2014 article’s authors, submitted an evaluation regarding this instant case, which was attached to Defendant’s motion. In his report, Dr. Miller indicated that he reviewed the child’s medical records and determined that there are compelling observations that child abuse was the incorrect diagnosis and that the child had evidence of metabolic bone disease. Particularly, Dr. Miller indicated that the lack of bruising on K.D. is inconsistent with the allegation of violent handling of the baby; stating that violent handling of a baby is often expected to compromise the integrity of the skin leading to a bruise when a bone is broken by severe trauma. Dr. Miller opined that the lack of bruising in combination with the large number of fractures is the result of bone fragility rather than trauma. Dr. Miller opined that the lack of internal lung injury in light of the multiple rib fractures suggests that the physical forces that caused the rib fractures were not excessive and that some of the healing rib fractures could have been from the birthing process. Dr. Miller indicated that, based on his own study (i.e., the 2014 article referenced above), CMLs are really not fractures, but rather are findings of metabolic bone disease.

In his report, Dr. Miller stated that K.D. had some 3 CMLs, and based on the 2014 article, K.D.’s x-rays are suggestive of a metabolic bone disease. He further stated that because bones with CMLs are fragile, they can incur fractures with forces that might not otherwise cause a fracture such as from the birthing process, during the holding for medical procedures, or in the routine handling of infants. Dr. Miller also pointed out that the observation that K.D.’s brother would jump up and down when placed in the same crib with K.D. raises the possibility that the brother’s jumping may have caused some of the fractures. In addition, the evaluation by Dr. Miller indicated that the radiologist who read the films in 1993 and concluded that the x-ray findings were consistent with child abuse did not consider a differential diagnosis<sup>2</sup> of other

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<sup>1</sup> The article itself references pediatric radiologist, Dr. Paul Kleinman, who first used the term CML in 1986, and who has acknowledged the possibility that infantile rickets presenting with unexplained fractures may mimic child abuse.

<sup>2</sup> Differential diagnosis is a process by which a physician systematically eliminates possible causes of a patient’s ailment to arrive at its most probable cause. *Rink v. Chemtoba, Inc.*, 400 F.3d 1286, 1294 (11th Cir. 2005).

disorders that could also present with unexplained fractures including scurvy, copper deficiency, rickets, or the maternal use of drugs that can interfere with fetal bone development strength.

## **II. The Evidentiary Hearing Testimony:**

### **A. K.D.:**

The victim in this case, K.D., is now twenty-five at the time of this hearing. K.D. testified that his birthday is February 8, 1993. He testified that he currently resides in Pennsylvania and is a tennis coach at a university up there. K.D. testified that he is healthy these days and has had additional x-rays done and has had no additional fractures since he was a baby.

### **B. Jeremiah Lyons:**

Mr. Lyons is a private investigator and was contacted by Defendant's mother to review Defendant's file and possibly help Defendant. He testified that he reviewed the files and then contacted Dr. Marvin Miller, whom Mr. Lyons was advised was an expert in shaken baby syndrome. He also retrieved and delivered x-rays of K.D. to Dr. Miller for evaluation.

### **C. Attorney Roger Mills:**

Attorney Mills testified at the evidentiary hearing. Attorney Mills represented Defendant for purposes of the trial in this case. Attorney Mills testified that this case involved solely circumstantial evidence. In other words, there was no direct evidence or eyewitness testimony demonstrating child abuse. Attorney Mills testified that he investigated the possibility that the injuries to K.D. were not the result of abuse. Attorney Mills testified that the State's original theory was shaken baby syndrome; so, he contacted an expert medical doctor to determine if K.D.'s injuries were not the result of child abuse. He testified that the expert medical doctor he contacted was an expert in shaken baby syndrome and had testified in court before as an expert. Attorney Mills testified that the expert reviewed K.D.'s medical records and x-rays and did determine that the injuries were not indicators of shaken baby syndrome. Specifically, the expert opined that the types, numbers, and locations of the fractures were inconsistent with a diagnosis of shaken baby syndrome. However, Attorney Mills testified that the expert had no other explanation for the injuries than some type of child abuse. Most significantly, Attorney Mills testified that he asked his expert if it were possible that the injuries to K.D. could have been caused by brittle bone disease or another bone disorder. It was the expert's opinion that K.D.'s injuries were not the result of a bone disease. The expert believed the injuries were the result of child abuse. Attorney Mills

testified that he was unable to present an alternative defense theory at trial other than that Defendant was not the abuser.

Attorney Mills testified that he is now aware of the 2014 article by Drs. Miller and Ayoub, which concludes that CMLs are not specific for child abuse but are indicative of a metabolic bone disorder. He testified that had he had this article and Dr. Miller's report at the time of trial, it would have changed his defense at trial.

**D. Dr. David Ayoub:**

Dr. Ayoub, one of the authors of the article, testified at the evidentiary hearing. He indicated that he is an expert in diagnostic radiology and has testified as an expert in rickets twice. Dr. Ayoub testified that he has testified for the defense around 80 times. He testified that he sees metabolic bone disease nearly every day in his regular practice. He testified that he has reviewed around 1,500 known cases of rickets in his career. He further testified that he reviews between 70 and 250 x-rays per day. In preparation for this case, Dr. Ayoub testified that he reviewed digitized versions of K.D.'s x-rays taken April 5, 1993, which included left upper extremity, left lower extremity, and pelvis. He testified that he reviewed follow-up x-rays of left upper and left lower extremities that were taken in May 1993, November 1993, and May 1994. He indicated that the x-rays he reviewed were of isolated extremities and he did not have the opportunity to view a full skeletal survey. He testified that he did read reports from a skeletal survey and a CT scan of K.D.'s head. He testified that he also read Dr. Morris's deposition and trial testimony.

Dr. Ayoub testified that a CML is defined as a microscopic transverse fracture through the very end of the bone near the growth plate on long bones. He testified that the first time the phrase CML was used in peer-reviewed scientific literature was in 1986. Dr. Ayoub testified that CMLs have been thought to be produced by pulling or twisting a child's limb. He indicated that the term CML is used broadly to describe any fracture near the growth plate. Dr. Ayoub listed several criticisms of the CML-abuse theory. One of Dr. Ayoub's criticisms is that trauma will produce bleeding of the bone, and there is no bleeding associated with CMLs. He testified that the belief that the CMLs simply go away and that the bones do not repair themselves with a callus, but rather with excess cartilage, is counter to the theory of trauma. Dr. Ayoub testified that the authors of the 2014 article, including himself, first reviewed the methodologies in the CML-abuse research. He testified that they then compared purported cases of CML-abuse cases and known cases of infantile rickets. He testified that they compared 1,500 rickets images going back all the way to a 1926

Austrian study. He testified that they found the images were nearly indistinguishable radiographically.

He testified that a diagnosis of infantile rickets (12 months or younger) is based on screening studies, such as under a microscope in autopsy studies or via x-ray screening studies, because it is not apparent clinically. In other words, infantile rickets most often presents no symptoms and is found incidentally. If there are symptoms, they would typically include irritability, GI upset, constipation, bloating, spitting up, poor feeding, head sweating, increased risk of upper respiratory tract infections, increased risk of fractures, and skin rashes. Dr. Ayoub testified that infantile rickets is caused by a vitamin D deficiency or calcium phosphorous deficiency. He testified that prolonged breast-feeding has a correlation with rickets whereas formula is fortified with vitamin D.

Dr. Ayoub talked about rickets dating back to 1650, and referenced a 1920s study out of Vienna, Austria, which first correlated rickets with a vitamin deficiency.<sup>3</sup> He testified that 70 kids participated in the study and x-rays were taken every month. Of those 70 kids with rickets, 50% had fractures, although clinically, no observations were made that would have alerted to fractures. He referenced another study out of Seattle and testified that out of 40 kids with infantile rickets, 17.5% percent presented with fractures. He testified that other studies report less than 1% of fractures being associated with infantile rickets.

He testified that infantile rickets peaks around 2-4 months of age; then, after 8 months, there are no signs of rickets. Dr. Ayoub testified that it is possible to tell the difference on x-rays between active rickets and healing rickets. He testified that rickets typically only lasts between 2-3 months; thus, the growth plate can look normal until healing begins. Dr. Ayoub opined that, as strictly defined, CMLs are not a fracture and are not traumatic in nature. He testified that where there is the observation of a CML-like lesion, the differential diagnosis should include a metabolic bone disease, including rickets.

Dr. Ayoub testified that K.D.'s medical record reports used the terms "bucket handle fractures" and "corner fractures." He testified that the growth plate is actually not visible on an x-ray because it is water and cartilaginous. He testified that "corner fractures" are either Salter-Harris type fractures, which are growth plate fractures, or CMLs. The term "corner" is used because it is

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<sup>3</sup> Dr. Ayoub referred to the 1920's Vienna, Austria study of rickets with some frequency during his testimony and indicated that this study is the most comprehensive study conducted because of the continuous x-rays.

seen on the edges of the bone. He opined that the x-ray of K.D.'s left arm (humerus) showed a corner fracture of the CML type, rather than a Salter-Harris type fracture. Dr. Ayoub was asked how to date fractures, and he indicated that the primary way is to look at the periosteal reaction; which is a membrane that is visibly pushed away from the bone. He said the periosteal reaction is seen around 11 days. He said the other way to date a fracture is to look at the callus; which is a clump of white bone at the fracture site itself and includes blood.

Dr. Ayoub testified that his dating of the fractures are much younger than what Dr. Morris had originally dated the fractures at trial. Dr. Ayoub dated the fracture of K.D.'s left arm to be more than a week old, likely 2-3 weeks old. He did testify that this left humerus fracture is a true fracture, not a CML. He noted bleeding of the bone. Without an explanation for this fracture, Dr. Ayoub testified that it could either be caused by an unobserved trauma or fragile bone state. He testified that this is one of the last places to show rickets is the lower humerus. He testified that this fracture should include a differential diagnosis of infantile rickets in light of the large number of slipped growth plates.

As to the x-ray of K.D.'s left tibia fracture, the trial testimony described it as a bucket handle fracture. Dr. Ayoub opined that it appeared to be a bucket handle but that the fracture was actually a thickened mineralized perichondrial ring (with bleeding) and a slipped epiphysis. He described it as more of a Salter-Harris type of fracture; so, there was trauma; it was not a CML. Dr. Ayoub further opined that an event could have caused this fracture but that it was most likely due to metabolic-bone disease. He described the same circumstances in the left fibula x-ray except there was an absence of blood on the fibula x-ray, meaning it was non-traumatized. Thus, he opined that the x-ray of the left fibula supports a diagnosis of infantile rickets (in the healing stage). Dr. Ayoub opined that the x-ray of K.D.'s left femur showed a slipped epiphysis (i.e. growth plate), and not a true fracture. He testified that the femur x-ray showed blood mineralizing that escaped the periosteum. He indicated the amount of blood in this x-ray is uncommon and is consistent with a metabolic bone disease. He dated this injury 10-14 days old.

As to the skull fracture, Dr. Ayoub testified that he was unable to locate this x-ray; however, he noted that it was parietal, meaning it spanned across the suture of two skull bones in the back of the skull. Dr. Ayoub testified that the parietal bone is the most common place to see rickets in. However, he also testified that the skull fracture was not a CML and not a growth plate fracture. Dr. Ayoub testified that a vacuum extraction at birth could lead to a higher probability of



this type of fracture. He specified that there is about a 5% risk of fracture from a vacuum extraction in healthy kids. Dr. Ayoub opined that for a skull fracture to result from dropping a baby, the fall would need to be under 3 feet; death would result from a fall at 4 feet or above. He disagreed with the trial testimony that this skull fracture was specific to child abuse. He testified that it is not possible to date skull fractures since they heal so slowly, indicating that it could take months for a skull fracture to heal.

Dr. Ayoub testified that he was also unable to locate full rib x-rays for K.D.; however, he reviewed the trial testimony and noted that the rib fractures were on sequential ribs. Dr. Ayoub testified that sequential rib fractures are characteristic of metabolic bone disease. He noted that there were no internal injuries or bruising related to the rib fractures and that if there had been abuse, one would expect more bruising and less fracture since baby ribs are bendy (i.e. elastic). He testified that ribs are one of the more common bones to exhibit fractures in infantile rickets. He also testified that posterior rib fractures are not growth plate fractures and not CMLs.

He testified that he was also unable to locate an x-ray of K.D.'s clavicle, but did review the trial testimony. Dr. Ayoub did testify that a vacuum-assisted delivery comes with a higher risk of clavicle fractures. He testified that the clavicle fracture was not a growth plate fracture and not a CML. He testified that the clavicle is more susceptible to fracture in kids and is a common birth injury. Dr. Ayoub admitted that he would need to see all of the x-rays to more accurately form an opinion, but still believes that the pattern of skull, clavicle, rib fractures, and suction delivery are indicative of fragile bones or metabolic bone disease.

Dr. Ayoub testified that he compared K.D.'s x-rays to known metabolic bone disease x-rays, and he saw signs of metabolic bone disease in K.D.'s x-rays. More specifically, he indicated that he saw signs of healing rickets in K.D.'s x-rays. He testified that a feature of bone fragility disorders is that normal handling could cause bone fractures. He testified that he believes K.D. had healing infantile rickets, as well as possibly a copper deficiency.

Dr. Ayoub testified that it is possible for a child with infantile rickets to also be abused. He believes that there are true fractures and signs of metabolic bone disease. Dr. Ayoub testified that the fractures to K.D.'s lower femur, upper humerus, and upper tibia occurred on the same date (2-3 week window) and all could have come from holding the baby down during vaccination. He testified that the pattern of injuries is consistent with metabolic bone disease.

**E. Dr. Marvin Miller:**

Dr. Miller is another one of the authors of the 2014 article, and also testified at the evidentiary hearing. He testified that he has been a pediatrician for 42 years and a medical geneticist for 38 years. He testified that his clinical research interest is in pediatric bone disease and he has seen around 800 reports on metabolic bone disease. He indicated that like Dr. Ayoub, Dr. Miller had also reviewed K.D.'s medical records and x-rays. Dr. Miller did concede he is not a radiologist and he defers to Dr. Ayoub's radiographic interpretations. Thus, if Dr. Ayoub's interpretations are wrong so too are his opinions.

Dr. Miller testified that CMLs have long been associated with fractures and attributed to child abuse. However, he testified that CMLs clinically do not behave like fractures. For example, often there is no bruising, often there is no swelling, often there is no functional impairment (i.e., the child moves the joint well). He argues that often the radiology does not behave like a fracture in that CMLs are difficult to date. When follow-up x-rays are done, the CMLs often do not heal by callus but by filling in. He testified that based on this, he has concluded that the CMLs are not fractures at all, but are bone that has not mineralized.

Dr. Miller testified that vacuum extraction births are associated with skull fractures and posterior rib fractures. Dr. Miller speculates that the older brother jumping in the crib could cause injury as well as could holding the baby down for vaccination. Dr. Miller testified that he reviewed the skeletal survey and that it showed CMLs and multiple rib fractures. However, and as stated above, he testified that he is not a radiologist and that he defers to Dr. Ayoub for conclusions from the skeletal survey.<sup>4</sup>

Dr. Miller testified that the previous trial testimony is likely due to the simple fact that when a radiologist sees CMLs, the radiologist will diagnose as child abuse. He testified that the CMLs were likely caused by poor bone mineralization; and, that the fractures were caused by childbirth, vaccination, and the brother jumping in the crib. He stated it is unlikely for this to be child abuse in light of the lack of bruising or severe internal thoracic injury associated with the rib fractures. He testified that 6-9 rib fractures would leave other internal injury to the lungs, and that 12-15 rib fractures would result in a less than 1% chance of no bruising. However, he testified that with fractures in children over one year of age, only 8% of children present with bruising. He

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<sup>4</sup> The Court would point out that Dr. Ayoub testified that he did not see the full skeletal survey on K.D.; only x-rays of certain extremities.

testified that for a child with normal bone strength, it would require great force to cause a posterior rib fracture. Dr. Miller testified that his literature experience suggests that if there are 4 or more rib fractures on bones of normal strength, there would be present internal thoracic injury. Dr. Miller testified that the lack of bruising and internal thoracic injury with the rib fractures has the most important evidentiary value to him. Dr. Miller concluded that it is highly unlikely that K.D. was abused but that the evidence was consistent with bone fragility and that the rib fractures were a consequence of delivery.

Dr. Miller testified that the notion that CMLs resemble healing rickets was indeed pointed out in 2008 by Dr. Kleinman. However, Dr. Miller maintained that his 2014 article was the first to suggest that medical professionals should consider rickets when CMLs are present. He testified that any other radiologist who sees CMLs does not put rickets down as a differential diagnosis. All other radiologists associate CMLs with child abuse.

Dr. Miller would not conclusively state that this is a case of rickets but that rickets can affect many bones, and need not be symmetric. He testified that there can be situations where rickets or a metabolic bone disease has affected just one side of the body. However, he could not point to a specific case where rickets or a metabolic bone disease affected just one side of the body; but, he has seen a case where it was asymmetric; i.e., one bone on one side was affected and the same bone on the other side was not affected. He indicated that not every bone is affected to the same extent.

Dr. Miller testified that his review of psychological reports indicating that Defendant was unlikely to commit child abuse went to his conclusion that the child suffered metabolic bone disease. He conceded that he has testified around 100 times as an expert and has only testified for the defense. He testified that in each of those cases, there was another explanation for the injuries other than child abuse.

**F. Dr. Mark Morris:**

Dr. Morris testified at the evidentiary hearing; he also testified at the original trial. He testified that he worked as a private pediatrician as well as worked with and was the medical director of the Child Protection Team from the 1980s until either 2004 or 2005. He testified that he is an expert in pediatrics and child abuse and has testified in court many times. He testified that he generates reports that are reviewed by both the defense and the State and has testified for both sides.

Dr. Morris testified that K.D. first presented to him at 2 months old in April 1993 with multiple fractures. Dr. Miller maintained his diagnosis of child abuse at the time K.D. presented as well as at the time of this evidentiary hearing. He testified that his opinion of child abuse was based on the timing and nature of K.D.'s injuries, the lab results, and a lack of adequate accidental explanation for the injuries.

Dr. Morris testified that he read the article authored by Drs. Ayoub and Miller and he does not agree with its conclusion. He further testified that widespread opinion also does not agree with the article. Dr. Morris testified that the article is not generally accepted in the medical community. Dr. Morris testified that CMLs are a type of injury that you see in growing bones and are associated with child abuse in infants because of the lack of accidental explanation. He even pointed out that Dr. Miller testified that CMLs were not fractures while Dr. Ayoub testified that they were fractures.

Dr. Morris testified that vitamin D deficiency rickets is not a new disorder; that it has been a diagnosis since pediatrics has been around; however, infantile rickets has become an extremely rare diagnosis in the United States with the advent of mothers taking vitamins as well as supplements in formula. Dr. Morris testified that he is not aware of infantile rickets peaking at the age of 2-3 months and that this notion is not supported by the pediatric literature. He did testify that rickets is a metabolic bone disease and can affect the whole bone. For vitamin D deficiency rickets, it especially affects the growing parts of the bones, which are at the joints. He testified that you would be able to see fragile (less dense) or thin bones on an x-ray. Thus, you can distinguish between normal bones and fragile bones, which would make them unusually susceptible to fractures. Particularly, he testified that you can see rickets on an x-ray and that there is an abundance of literature as to what rickets looks like on x-rays.

He testified that he personally looked at K.D.'s x-rays and reviewed them with the radiologist. He testified that his opinion that rickets was not the proper diagnosis for K.D. was based in part on the fact that only the bones on the left side of K.D.'s body were fractured; none on the right side were fractured. He also testified that when you compare K.D.'s bones to the bones of a child of similar age, K.D.'s bones appeared normal, i.e., not thin or less dense. Dr. Morris testified that if the bone is thin or does not have the density that it should, you would expect to find rickets. Dr. Morris testified that he looked for craniotables, which is a special appearance of the skull bones in rickets, and craniotables did not exist in K.D.'s skull x-ray or CT scan.

Dr. Morris testified that the delivering doctor said that K.D.'s birth was not a difficult one. Dr. Morris testified that K.D. was initially breast-fed, but had difficulty from the outset, and did both breast-feeding and formula before shifting completely over to formula at 3-4 weeks of age. Dr. Morris testified that it was his understanding that the mother took prenatal vitamins during her pregnancy with K.D. He further testified that the formula K.D. was on was supplemented with vitamin D.

Dr. Morris testified that it is rare for infants to have bruises because they are largely immobile; i.e., they do not run, jump, climb, or are otherwise active. He explained that he often does not see bruising with fractures in infants because the trauma is through the baby's clothing or blanket, which will absorb the external force. He testified that this is an observation he has made in his experience and practice where a child presents with a fracture and no bruising. He disagreed that the rib fractures occurred during birth. He testified that the lack of thoracic injury in light of the number of rib fractures does not dissuade him from a diagnosis of child abuse. He testified that it is possible to have infant rib fractures without internal thoracic injury and he disagrees with the notion that the number of rib fractures correlates with a result of internal thoracic injury. Indeed, he testified that the literature disagrees that the number of fractures correlates with internal injuries.

Dr. Morris testified that the skull fracture is highly suggestive of child abuse; however, it is not highly specific to child abuse. He testified that most infant skull fractures are the result of an accident, and are not specific to child abuse. He testified that K.D.'s skull fracture is highly suggestive of child abuse because the fracture is long and spanned across the suture line; i.e. the fracture spanned two bones of the skull, and there was no explanation of accidental injury.

Dr. Morris testified that at the time he evaluated K.D. in 1993, he did consider metabolic bone disease and ruled the diagnosis out on the basis of K.D.'s normal blood chemistries and the x-rays. As to the x-rays, he testified that in ruling out a metabolic bone disorder, he looked for the craniotabes in the skull, the cupping in the growth plates, thinning of the cortex of the bone, changes in bone density, or any type of growth abnormalities. He testified that metabolic bone disease should affect the entire body; not just one side or another. He further testified that he ruled out rickets as a diagnosis in 1993. Dr. Morris testified that he continued to evaluate K.D., including having follow-up x-rays done, and treated K.D. until K.D. was one year old. Dr. Morris testified that K.D. was not treated for rickets, and the fractures healed on their own. Dr. Morris testified that if an infant had rickets involving fractures, treatment would normally occur. He indicated that

the subsequent x-rays showed healing fractures, and growth and development were completely normal. He testified that there were no findings whatsoever that pointed to rickets.

**G. Dr. Sally Smith:**

Dr. Sally Smith testified at the evidentiary hearing; she also testified at the original trial. Dr. Smith testified that she is board certified in general pediatrics and child abuse pediatrics. She testified that she reviews the radiological studies (e.g., x-rays and CT scans) of all children that she sees. She testified that she keeps up with all radiological studies, and keeps up with new and developing issues in the area of child abuse.

Dr. Smith testified that a CML is a type of fracture through the growth plate, which has a characteristic appearance on x-rays, and is considered to be highly specific to child abuse in children that are not ambulatory (i.e., running, jumping, etc.). In other words, the presence of a CML means it is very rare for child abuse not to be the case. She testified that she has reviewed CMLs on x-rays. She testified that a non-ambulatory infant would not get CMLs without trauma because CMLs require pressure/traction.<sup>5</sup> Dr. Smith testified that both bucket handle fractures and corner fractures are types of CMLs and both are indicative of child abuse in infants. She testified that growth plate fractures in infants are almost always the result of child abuse.

Like Dr. Morris, Dr. Smith indicated that rickets is not common in the United States. She testified that it would take many months for an infant to get severe rickets, and it is only possible for fractures to result from severe rickets. She testified that metabolic bone disorders such as rickets are diffusely distributed and symmetric. She testified that rickets is usually worse in the wrist and femur.

Dr. Smith testified that many young children with fractures do not have associated bruising. She specified that around 10-25% of children with fractures will have associated bruising. She testified that rib fractures may or may not come with associated bruising. For example, squeezing the infant with fingers may cause bruising but squeezing the infant to the chest as in a hug may not cause bruising. She further testified that often times rib fractures present without any internal thoracic injury.

She testified that she also read the 2014 article and that she generally disagrees with it. Dr. Smith disagrees that CMLs resemble healing rickets. Specifically, she testified that if you put them

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<sup>5</sup> At trial and at the evidentiary hearing, Drs. Morris and Smith testified that the primary mechanism forming a CML is pulling or jerking, i.e., trauma.

side by side, they look different. She testified that there are more abnormalities to the growth plate in the case of rickets as opposed to CMLs. For example, in rickets, you would see widening, cupping, and fraying of the entire growth plate. She testified that in her experience, she has only had a few cases of rickets over the last 30 years. She testified that it would take 6-12 months for growth plates to look normal after rickets.

## ANALYSIS

### **I. Newly Discovered Evidence:**

The Court finds that the purported evidence of metabolic bone disease is not newly discovered evidence.

#### **A. New Medical Opinions:**

Defendant asserts that the article and Dr. Miller's report/opinion that K.D.'s injuries were the result of metabolic bone disease and not child abuse are newly discovered. While technically produced within the two years prior to the filing of Defendant's motion, the 2014 article, and Dr. Miller's 2015 opinion, are merely a different medical opinion/conclusion than that presented at trial. Specifically, the article references old and dated studies but comes to a different conclusion than that generally accepted in the medical community. See, e.g., *Diaz v. State*, 945 So. 2d 1136, 1146 (Fla. 2006) (finding that a doctor's letter discussed lethal injection research was not newly discovered evidence because the letter's conclusions were based on data from a study conducted in 1950), receded from on other grounds in *Darling v. State*, 45 So. 3d 444 (Fla. 2010); see also *Rutherford v. State*, 940 So. 2d 1112, 1118 (Fla. 2006) (stating that "[t]he ABA Report is a compilation of previously available information related to Florida's death penalty system and consists of legal analysis and recommendations for reform..." in concluding the ABA Report is not newly discovered evidence); *Schwab v. State*, 969 So. 2d 318, 325 (Fla. 2007) ("this Court has not recognized 'new opinions' or 'new research studies' as newly discovered evidence."). In *Morton v. State*, 995 So. 2d 233, 245 (Fla. 2008), the defendant argued the trial court erred in rejecting as newly discovered evidence a "2004 brain mapping study." The court recognized that the study had not been published at the time of the defendant's trial but concluded, "Morton or his counsel could have discovered similar research at that time that stated that the human brain was not fully developed until early adulthood. *Id.*

According to Drs. Ayoub and Miller, their article makes two points: first, that the evidence for CMLS as traumatic lesions is weak and second, that CMLs resemble rickets. According to all

four experts that testified at the evidentiary hearing, metabolic bone diseases, including rickets, have been recognized for at least the last 100 years. Dr. Ayoub specifically referenced several earlier 20th century studies of rickets, their appearance, and the nutritional deficiency causation. Additionally, the phrase CML has been around since at least the 1980s. It has also been acknowledged since at least 2008 that CMLs may resemble metabolic conditions, including rickets. Indeed, another article submitted by Defendant and authored by Dr. Kleinman (published in 2008) specifically addresses rickets as a possible differential diagnosis when CMLs are present and described “[t]he small premature infant may demonstrate metaphyseal fractures indistinguishable from the corner fracture pattern[, which is a type of CML], and infants undergoing vigorous passive range of motion exercises may develop these lesions.” That same article also indicated that vitamin D deficiency, common in excessively breast-fed infants, may cause rickets, with corresponding radiographic findings of fractures.

#### **B. Causation - Differential Diagnosis:**

A “[d]ifferential diagnosis is ‘an established scientific methodology in which the expert eliminates possible causes of a medical condition to arrive at the conclusion as to the actual debilitating factor.’” *Marsh v. Valyou*, 977 So. 2d 543, 548 n.2 (Fla. 2007). A differential diagnosis founded solely upon and expert’s experience and training is considered pure opinion testimony and is not subject to the *Frye* analysis as it relates to causation. *Id. See also, Gelsthorpe v. Weinstein*, 897 So. 2d 504, 510 (Fla. 2d DCA 2005) (Doctor’s “testimony in this case should not have been subjected to *Frye* analysis because it constituted ‘pure opinion testimony based upon clinical experience’”). The 2014 article offered by Defendant is not “pure opinion” and is subject to *Frye*. The authors tout that it is a “peer reviewed” article for whatever value the peer review connotes. The article takes issue with the conclusion/theory that CMLs are indicative of child abuse. The article associates CMLs with metabolic bone disease, a potential differential diagnosis to child abuse, and is largely an argument of faults as to the methodology employed by Dr. Kleinman in coming to his conclusion that CMLs are highly specific to child abuse. The 2014 article is essentially an expansion on an already acknowledged similarity but arrives at a different conclusion. *See, e.g., Johnston v. State*, 27 So. 3d 11, 21 (Fla. 2010) (“The fact that existing data has now been consolidated into a report does not render the report newly discovered evidence.”). To support his conclusions Dr. Ayoub continuously referred to the 1920’s Vienna, Austria study of rickets. He posited that this study is the most comprehensive study conducted because of the



continuous x-rays. The study was offered every time it supported his conclusions relating to the similarities between CMLs and rickets. Similarities that have been acknowledged since at least 2008 meaning that the 2014 article reaching this same conclusion would not constitute newly discovered evidence as to this case. Moreover, the doctors in this case who initially evaluated K.D. came to the conclusion that the fractures were CMLs and, in light of other considerations, came to the conclusion that the CMLs were indicative of abuse. The doctors who evaluated K.D. at the time of trial did in fact consider rickets but ruled it out as a diagnosis based on an absence of features characteristic of rickets and in considering the history presented at the time.

Additionally, Dr. Morris testified at trial and during the evidentiary hearing that after reviewing K.D.'s mother's medical records relative to K.D.'s delivery, he did not notice anything that would have caused K.D.'s injuries. The testimony presented at the evidentiary hearing indicates a vacuum-assisted delivery, but there was no other testimony that the delivery was otherwise difficult. Moreover, Drs. Ayoub and Miller testified that rib fractures related to delivery occur only in the posterior ribs, and K.D. had fractures in both his posterior and lateral ribs. Drs. Ayoub and Miller collectively testified that the skull, clavicle, and rib fractures could have occurred during the birthing process, seemingly if K.D. had bone fragility or if the vacuum was not placed in the proper location. But other than indicating that skull fractures are difficult to date, neither doctor had an explanation as to why the fractures would still be apparent two months after birth. At trial and at the evidentiary hearing, Dr. Morris indicated that a skull fracture spanning two bones is highly suggestive of child abuse. Although, Dr. Morris also conceded at trial that skull fractures are a common accidental injury, there was no testimony at trial or at the evidentiary hearing that K.D. was ever accidentally dropped, thereby explaining the injury to the skull. Dr. Morris also indicated at trial that clavicle fractures occurring during birth are exclusive to the mid-portion of the clavicle, whereas K.D.'s clavicle fracture was at the distal point, i.e. near the shoulder joint.

At trial, Dr. Morris testified that fractures were noted in K.D.'s 1) left distal radius (the forearm), 2) humerus (upper arm), 3) left side of the skull spanning the parietal and occipital bones, 4) 5th, 6th, 7th, and 8th, ribs towards the front and the 8th, 9th, and 10th ribs towards the back, 5) left femur (upper leg), 6) tibia (lower leg), and 7) clavicle. Dr. Morris testified at trial that he looked for other causes to explain K.D.'s injuries including rickets and found no other medical cause. He testified that he dated the fractures based on stages of callusing.

Dr. Ayoub also testified that fractures can be dated by callusing, although he disagreed with Dr. Morris's dates. Dr. Morris testified at trial that skull fractures are difficult to date because they do not callus, as well as the radius fracture due to how small the chip was (although when pressed gave a date of within 2 weeks old). He testified that the humerus fracture was approximately 4 weeks old at the time of the April 8, 1993 x-rays, the proximal rib fractures were approximately 4 weeks old, the lateral rib fractures were approximately 2-3 weeks old, the femur fracture was approximately 4-6 weeks old, the tibia fracture was approximately 4-6 weeks old, and the clavicle fracture was approximately 2 weeks old. He concluded that K.D. was abused based on the number of fractures, the fact that they occurred over a period of time, and the fact that corner fractures are specific to child abuse. The ages of these fractures do not correspond with Dr. Ayoub's assessment of when infantile rickets peaks nor do they correspond with K.D.'s birth date.

In light of the above, the Court finds that the 2014 article and Dr. Miller's 2015 opinion that K.D. suffered from a metabolic bone disease and was not abused does not constitute newly discovered evidence. The differential diagnosis of metabolic bone disease, including rickets, was a consideration at the time of Defendant's trial. Therefore, the production of an arguably more in-depth but certainly differential analysis of those similarities would not constitute newly discovered evidence. Relying on other studies to draw its conclusions means that Drs. Ayoub and Miller's differential diagnosis was not the product of personal opinion but instead opinions based on scientific analysis.

This court is unable to find that testimony related to the 2014 article is admissible as pure expert opinion because it is purportedly based upon scientific research and analysis. Where, as is the case here, the differential diagnosis is purportedly based upon scientific research and analysis and not pure opinion, the diagnosis, without more, is insufficient to prove causation. See, *Rink v. Cheminova, Inc.*, 400 F.3d 1286, 1295 n.8 (11th Cir. 2005) (differential diagnosis evidence by itself does not suffice for proof of causation). The opinion is therefore subject to the *Frye* test.

#### C. Due Diligence:

The testimony at the evidentiary hearing indicates a private investigator was employed, who contacted experts in shaken baby syndrome and came across Dr. Miller. There was no explanation as to why the private investigator was not contacted sooner or why the 2008 conclusion that CMLs resemble rickets could not have been discovered prior to the publication of the 2014 article. Moreover, the article is not a product of newly developed science, as Defendant alleges,

but rather, is a difference of opinion as to radiological images. At the very least, the similarities between CMLs and rickets was pointed out in 2008. There was no explanation as to why Defendant could not produce at an earlier time an expert who could compare K.D.'s x-rays to known rickets x-rays, as Dr. Ayoub claims to have done, and come to the conclusion that K.D. suffered from rickets. What Defendant asserted in his motion as "ground breaking" is not ground breaking but instead a difference of opinion. This Court cannot say this difference of opinion is likely to produce an acquittal on retrial. *Jones*, 709 So. 2d at 521.

## II. Credibility:

"[C]redibility of witnesses is always in issue, even [when] credibility is not raised by the pleadings." § 401.1 Definition of relevant evidence, 1 Fla. Prac. Evidence (2018 ed.); *see also*, *Bell v. State*, 491 So. 2d 537, 538 (Fla. 1986); *Lawhorne v. State*, 500 So. 2d 519, 520 (Fla. 1986). When considering a postconviction claim of newly discovered evidence the trial court appropriately takes into consideration the credibility of the witness offering the evidence in its analysis. *See Preston v. State*, 970 So. 2d 789, 798 (Fla. 2007) (where a trial courts makes findings in a postconviction motion as to the credibility of a witness, the findings are reviewed for competent and substantial evidence); *Hurst v. State*, 18 So. 3d 975, 993 (Fla. 2009) ("In reviewing the circuit court's decision as to a newly discovered evidence claim following an evidentiary hearing, where the court's findings are supported by competent, substantial evidence, we will not substitute our judgment for that of the trial court on questions of fact, credibility of the witnesses, or the weight to be given to the evidence by the trial court.").

### A. Myopic Expertise:

At trial and at the evidentiary hearing the state called Dr. Mark Morris. Dr. Morris indicated that he has generated reports and testified for both the State and the defense depending on the particular case. Dr. Morris does not appear to have any personal interest in the theory that CMLs are highly specific to child abuse. It is not a theory that he came up with or actively defends. Rather, it is a well-established opinion in the medical community. The Court was presented with two expert defense witnesses, Drs. Ayoub and Miller, who this court cannot believe were objective in their testimony. Between the two of them, they have testified in nearly two hundred cases where there was alleged child abuse. Collectively, they have reviewed thousands of x-rays. And yet, not once, in nearly two hundred cases, has either defense expert found a case where child abuse was the cause of the child's injuries. In the years each has served as expert witnesses there has not been

one case of broken arms, ribs, clavicle, legs or fractures of the skulls, which either doctor has found to be the result of child abuse. The revelations exceed the limits of credulity. Dr. Ayoub admits that of the thousands of cases he has reviewed, the only cases of child abuse he has seen in his practice are accompanied by an admission from the abuser or observation by a witness. In other words, he is predisposed to find that no matter how severe the injury, unless there is a witness to the abuse or an admission by the abuser, there must be some other cause of the child's injuries. The revelations explain why both doctors are frequent defense witnesses. It also explains why neither has ever testified for the prosecution. This Court is challenged to believe that any jury, presented with these revelations, would believe that either doctor's opinions are credible. "[S]cientific recognition requires the testimony of impartial experts or scientists." *Gosciminski v. State*, 132 So. 3d 678, 704 (Fla. 2013).

#### **B. Selective Regional Rickets:**

All four doctors described rickets essentially as a weakening of bones, usually because of an extreme and prolonged vitamin D deficiency. At the time of trial, K.D. had as many as twelve injuries from head to toe. It is clear from the testimony of the various experts participating in the evidentiary hearing, that metabolic bone disorder is not selective or regional. Throughout the hearing testimony of rickets and a possible copper deficiency, the Court was never advised of any studies that isolate such disorders to one side or one region of the body. Yet, K.D.'s injuries were exclusively confined to his left side. It again stretches the limits of credulity that the possible bone diseases Drs. Ayoub and Miller ascribe to K.D. were unlike bone diseases that afflict any other person especially any other infant in that they were confined to one side of K.D.'s body. How it is that the birthing process and/or the handling of K.D. could have caused injury to only one side of K.D.'s body remains unexplained. An amalgamation of differing possibilities is advanced to answer the question (i.e. the clavicle *could* have been broken during the birth, the femur *could* have been broken while K.D. was given a shot, the ribs on the side *could* have been broken during handling and during the birthing process). Even if rickets, copper deficiency, or some other metabolic bone disorder could have afflicted K.D. at the time of various injuries, none of the various explanations account for the injuries being on one side of K.D.'s body.

Additionally, both Drs. Ayoub and Miller, in an effort to account for the leg injury to K.D., suggest that the broken bone could have occurred when the child was "held down" to receive a shot. One does not have to be a pediatrician or an expert to know that a two-month child does not

have to be held down to receive a shot. They are nearly immobile. They are unaware of what is about to take place and have no awareness of the need to brace or flinch. They don't realize what is occurring until it is over or almost over. The image that the defense experts seem to hope to conjure is that medical professionals, who this Court assumes to have training and experience on how to handle and administer a shot to a two-month old infant, in this particular case forgot their training and broke K.D.'s leg. Jurors live in this world and courts of law rely on that fact. We assume, correctly, that they will have different backgrounds and life experiences. Indeed, we rely on that fact. It is likely that every jury comprised of six people will have at least one juror who is parent. It is likely there will be more than one. Others juror, even those who are not parents, may have experience with caring for newborns or infants not older than two months. We would expect those jurors to rely on their common sense in evaluating the evidence presented and the credibility of the witnesses. This Court does not believe that jurors, using their life's experience and their common sense would believe that K.D. was "held down" while being given a shot or that his leg was broken in the process.

Dr. Ayoub testified that infantile rickets peaks between 2-4 months; however, he also indicated that K.D.'s x-rays, taken at exactly 2 months of age, showed characteristics of healing rickets. Dr. Ayoub also testified that prolonged breast-feeding has a correlation with rickets. He seemed to assume, without foundation, that there was prolonged breast-feeding of K.D. However, the evidence presented demonstrated that K.D.'s mother took prenatal vitamins and K.D. began taking formula almost immediately after birth and switched completely over to formula by 3-4 weeks of age. Prenatal vitamins and formula are supplemented with vitamin D. Dr. Ayoub testified that the lab reports showed normal calcium levels in K.D. Thus, the theory that K.D. suffered a vitamin D deficiency causing rickets because of prolonged breast-feeding is severely undermined. In fact, there was no evidence presented either at trial or at the evidentiary hearing that K.D. suffered any nutritional deficiencies. After K.D. was removed from the care of Defendant, the child suffered no further injuries further undermining the theory of K.D. having brittle bones or vitamin D deficiency.

### III. *Frye* Test:

The Florida Supreme Court has reaffirmed that expert testimony that extols scientific research, discoveries, and theories are subject to the *Frye* analysis. *DeLisle v. Crane Co.*, 43 Fla. L. Weekly S459 (Fla. Oct. 15, 2018) ("This rule - that expert testimony should be deduced from

generally accepted scientific principles—has been the standard in Florida cases and, today, we reaffirm that it is still the standard.”). In *Bundy v. State*, 471 So. 2d 9 (Fla. 1985), the Court described the *Frye* test as one in which “the results of mechanical or scientific testing are not admissible unless the testing has developed or improved to the point where experts in the field widely share the view that the results are scientifically reliable as accurate.” *Id.* at 13. Trial judges are in no better position than the average member of the public to discern whether expert testimony is reliable. The use of technical industry related terms can and often will confuse the average judge just as it may the average juror. See *Brim v. State*, 779 So. 2d 427, 435 (Fla. 2d DCA 2000) (a trial judge is “not expected to perform the superhuman task of transforming herself into an expert within the community”). It is for this reason “[t]he trial judge is determining legal reliability, as a threshold test of legal relevance, by judging—as an objective outsider—the level of acceptance that a principle or procedure has achieved within a scientific community.” *Id.* at 434. “The underlying theory for this rule is that a courtroom is not a laboratory, and as such it is not the place to conduct scientific experiments. If the scientific community considers a procedure or process unreliable for its own purposes, then the procedure must be considered less reliable for courtroom use.” *Stokes v. State*, 548 So. 2d 188, 193–94 (Fla. 1989). The burden is on the proponent of the new or novel scientific theory to prove that it has gained acceptance. See *Ramirez v. State*, 651 So. 2d 1164, 1168 (Fla. 1995) (“In utilizing the *Frye* test, the burden is on the proponent of the evidence to prove the general acceptance of both the underlying scientific principle and the testing procedures used to apply that principle to the facts of the case at hand.”).

As a part of the *Frye* analysis the Court again refers to the defendant’s motion wherein he argues that the article on which it is premised evinces “a groundbreaking scientific discovery,” (emphasis added), a discovery that fills “gaps in our collective knowledge” that existed at the time of his trial. Defendant alleges that if the jury had the benefit of this “unequivocal diagnosis,” the trial would have resulted in an acquittal. Hence, the motion argues not just a difference of opinion but an actual “discovery,” a verifiable scientific fact. Indeed, our supreme court has recognized that two competing theories cannot both satisfy the *Frye* test. See *Brim v. State*, 695 So. 2d at 272 (Fla. 1997) (“It certainly is true that two conflicting principles or theories cannot simultaneously satisfy the *Frye* test. In such situations, either one principle or theory satisfies the *Frye* test and the other does not or, in the alternative, both principles or theories fail to satisfy the *Frye* test.”). The

*Frye* test is utilized in Florida to guarantee the reliability of new or novel scientific evidence. *Id.* at 271. Clearly, “a groundbreaking scientific discovery” denotes new or novel scientific evidence.

The alleged newly discovered evidence authored by Drs. Ayoub and Miller has been published since 2014, and both admit that their theory has not been generally accepted in the scientific community. Dr. Ayoub testified that the medical community largely relies on Dr. Kleinman’s textbook *Diagnostic Imaging of Child Abuse*. He testified that Dr. Kleinman is a board-certified pediatric radiologist and is an authority in this field. Dr. Ayoub testified that his article did not result in a retraction of the notion in the medical community that CMLs are highly specific to child abuse. He admits that his article and criticisms of Dr. Kleinman’s textbook have not resulted in people not relying on Dr. Kleinman’s textbook. In other words, he testified that the medical community still relies on the radiographic appearance of CMLs as being highly specific to child abuse.

The evidence presented at hearing and already discussed herein establishes that both Drs. Ayoub and Miller testify exclusively for the defense. The evidence also shows that neither is objective in their analysis of the evidence finding no case of actual child abuse where there is not a confession or witness to the abuse. Because both Drs. Ayoub and Miller testify exclusively for the defense it is clear that there are other incentives for the testimony they offer.

*Frye* requires more than the testimony of an expert who has a personal stake in the theory or is prone to an institutional bias. *Ramirez v. State*, 810 So.2d 836, 844 n. 13 (Fla.2001). “[G]eneral scientific recognition requires the testimony of impartial experts or scientists. It is this independent and impartial proof of general scientific acceptability that provides the necessary *Frye* foundation.”

*Gosciminski v. State*, 132 So. 3d 678, 704 (Fla. 2013). This Court cannot say that either Dr. Ayoub or Dr. Miller is an impartial expert. This court concludes that Defendant’s newly discovered evidence does not meet the *Frye* test and would not be admissible at trial.

#### IV. *Williams* Rule Evidence:

The evidence presented at trial established that K.D. was the second infant who suffered significant injury while in Defendant’s care alone. The *Williams* rule evidence presented at trial unequivocally put a child later diagnosed with shaken baby syndrome in the care of Defendant at the time the baby was injured. Specifically, a father and mother left an otherwise healthy baby showing no signs of shaken baby syndrome in the care of Defendant while they went to work from around 5:00-6:00 p.m. until midnight on a Thursday night. The mother testified that when she

arrived home, the baby would typically be sleeping; however, Defendant was feeding the baby a bottle that night. She testified that she wrote Defendant a check and he left; that she finished feeding the baby and when she burped the baby, the baby projectile vomited, which was unusual. She testified that she called Defendant around 12:30 to ask if the baby had been sick and he indicated no problems with the baby except for the baby was not eating much. The mother testified that the baby got sick again throughout the night and she ended up taking the baby to the pediatrician the next morning. The baby was monitored at a hospital all weekend and was ultimately diagnosed with shaken baby syndrome based on the fever, fussiness, lack of appetite, vomiting, spinal tap results, hemorrhaging in the brain, and retinol hemorrhaging.

Defendant's trial testimony differed from the mother's as to what occurred when the mother got home. Defendant testified that he stayed an extra fifteen minutes to finish a movie, which the mother indicated did not occur and would have made her uncomfortable since Defendant was only recently familiar with the family, it was the middle of the night, and her husband had not yet come home from work. Two reports generated from this incident indicated Defendant's statement that when the mother got home, he handed her the baby and left, thus supporting the mother's version of events. Defendant's trial testimony also disagreed with the mother's testimony that she called around 12:30 and spoke to Defendant. Defendant testified that he did not hear about a problem with the baby until the next day when there was a message on his recorder saying that he was not needed as a babysitter that night because the baby was sick. The testimony of medical experts considered the onset and age of symptoms and placed the baby in Defendant's care at the time the shaking would have occurred.

The Court finds that the "new" evidence would not be likely to produce an acquittal on retrial in light of the compelling *Williams* rule evidence that Defendant had previously abused a child, the fact that rickets and metabolic bone disease had previously been considered and ruled out as a diagnosis prior to Defendant's trial, and the fact that the allegedly newly discovered evidence (i.e., the theory that CMLs are indicative of metabolic bone disease) is largely disagreed with in the medical community.

### CONCLUSION

Both Drs. Ayoub and Miller conceded that it is possible for a child with a metabolic bone disease to also be abused. Dr. Ayoub specifically testified that he could not exclude child abuse



from this case. In addition, exhibit 3 to the State's response, appears to be a letter in response to the new article authored by Drs. Ayoub and Miller and offered by Defendant. It states:

The editors of Pediatric Radiology have rejected contentions linking the high-specificity imaging findings of child abuse with rickets. We reaffirm this position. CMLs are therefore highly specific to child abuse. To deny this fact is to disregard the extensive experience and research of generations of pediatric radiologists.

Both Dr. Ayoub and Dr. Miller conceded that their opinion as stated in the 2014 article is not generally accepted in the medical community. They both testified that the medical community still relies on Dr. Kleinman's textbook and the opinion that CMLs are highly specific to child abuse. Thus, the opinion of Drs. Ayoub and Miller is clearly a fringe opinion and would be inadmissible or, if admitted, likely unpersuasive when compared to the generally accepted opinions and evidence presented at the original trial. Both doctors would have to concede that their opinion is essentially rejected by the rest of the scientific community. Additionally, a differential diagnosis alone is insufficient to prove causation. The Court therefore concludes that the evidence presented at the evidentiary hearing does not weaken the case against Defendant so as to give rise to a reasonable doubt as to his culpability. Thus, Defendant has failed to satisfy prong two of the *Jones* test and his motion must be denied.

Accordingly, it is

**ORDERED AND ADJUDGED** that Defendant's Motion for Postconviction Relief is hereby **DENIED**.

**DEFENDANT IS HEREBY NOTIFIED** that this is a final order, and he has thirty (30) days from the date of this order in which to file an appeal, should he choose to do so.

**DONE AND ORDERED** in Chambers at Clearwater, Pinellas County, Florida, this 11 day of December, 2018. A true and correct copy of the foregoing has been furnished to the parties listed below.

  
Michael F. Andrews, Circuit Judge

cc: Office of the State Attorney

*State v. Duncan*, CRC94-04801CFANO

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